Pharmacy Society of Wisconsin

Advancing Community Pharmacy Quality:

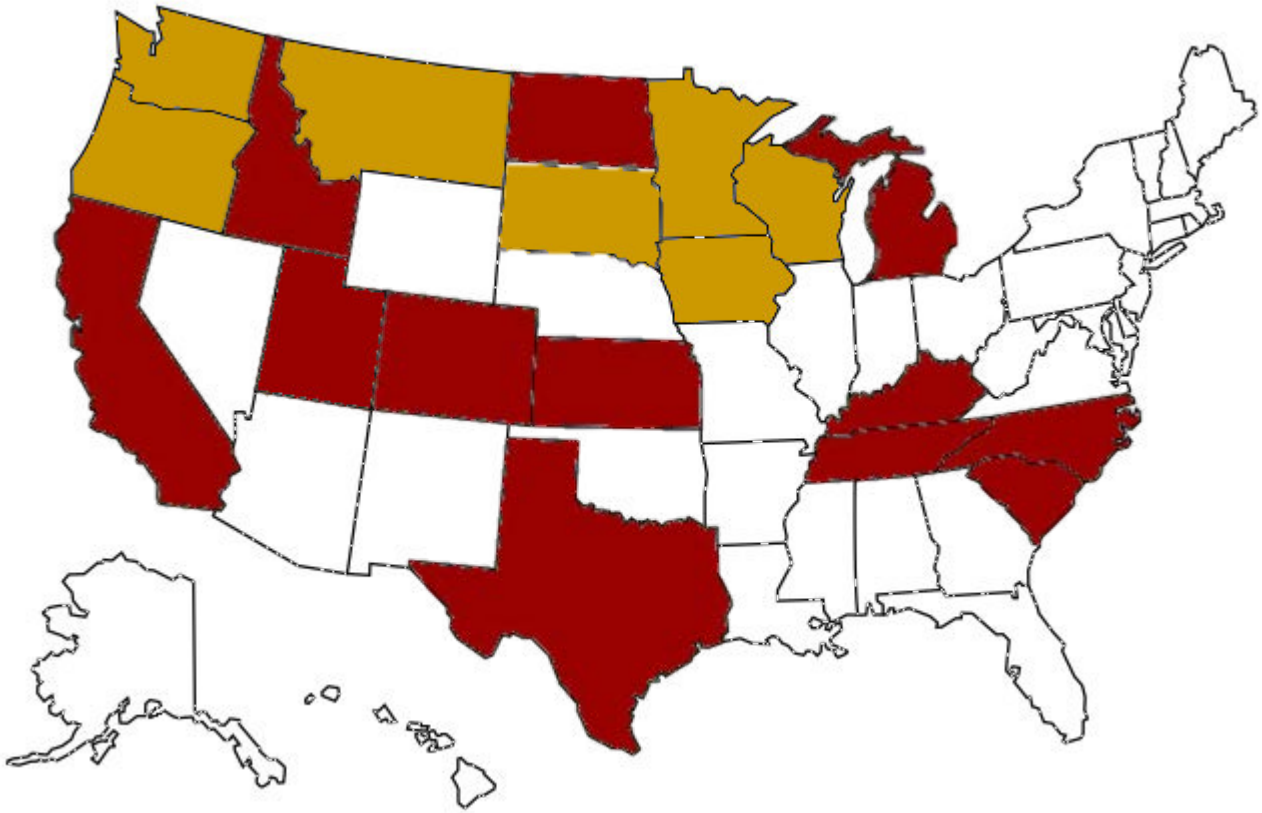
Leveraging Tech-Check-Tech (TCT) to Expand Patient Care Services in Community Pharmacies

TCT: Background

- Definition
  - Eligible, trained, and validated pharmacy technicians provide final verification of a technician-prepared medication
- Evidence
  - Technician accuracy in performing a final check is comparable to pharmacist accuracy
    - Traditional: 99.3% ± 0.68%
    - TCT: 99.6% ± 0.55%
  - Demonstrated time savings for clinical services
    - Range: 1 hour/day to 10 hours/month

Inpatient Tech-Check-Tech

- 19 states permit TCT in the inpatient setting



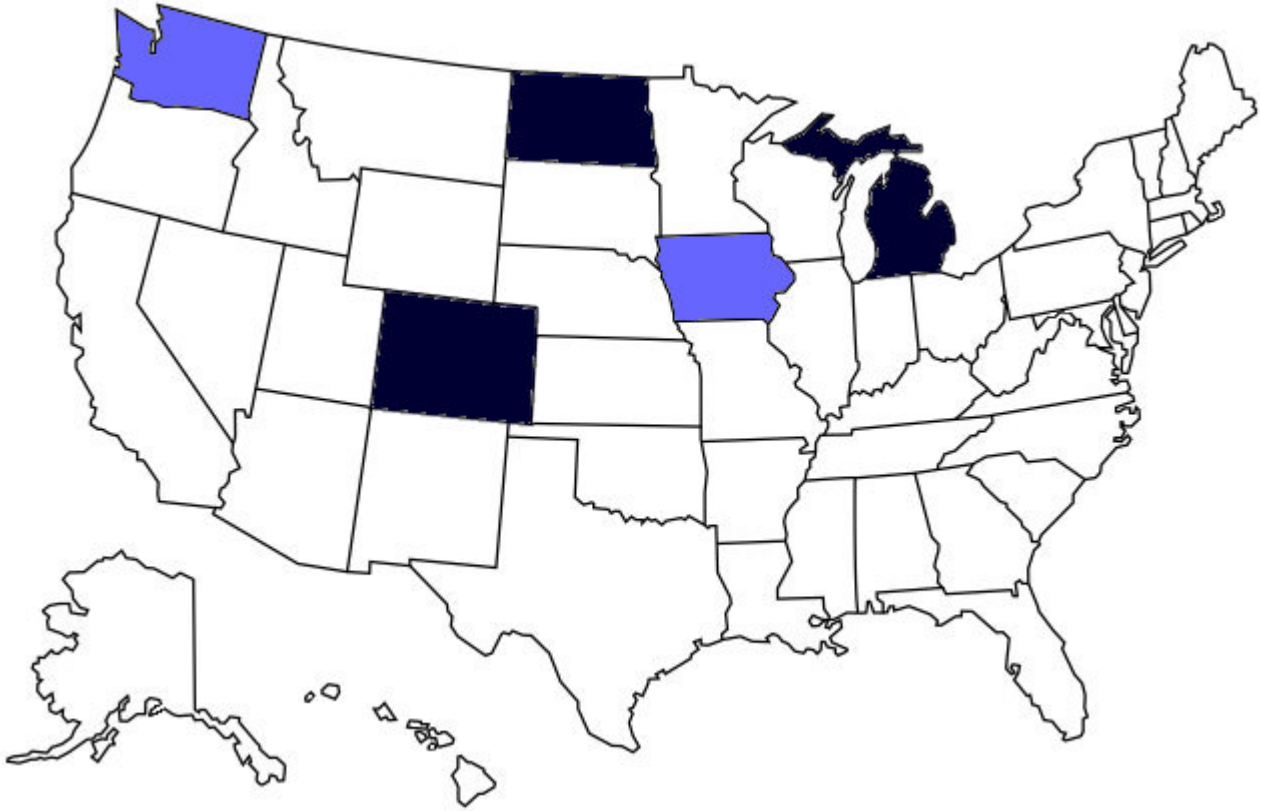
Permit Inpatient TCT

Inpatient TCT Programs Require Board of Pharmacy Approval

National Association of Boards of Pharmacy. 2015 Survey of Pharmacy Law Chicago: NABP.

Community Tech-Check-Tech

- 5 states permit TCT in the community setting



Permit Community TCT

Community TCT Programs Require Board of Pharmacy Approval

National Association of Boards of Pharmacy. 2015 Survey of Pharmacy Law Chicago: NABP.

Community-Based Pharmacist Services

- Pharmacists in the community
  - Increase patient access to care
  - Triage patient concerns
  - Improve patient outcomes
- Pharmacist service potential
  - Preventative health services
    - Immunizations
  - Medication optimization
    - Medication therapy management
  - Primary care services
    - Point of care testing
- Barriers
  - Time, insufficient staffing levels, high levels of dispensing

Community-Based TCT

- Potential
  - Improve pharmacist provision of clinical services
  - Leverage and engage pharmacy technicians
  - Streamlined pharmacy workflow efficiencies may generate cost savings
- Principles structured off of inpatient pharmacy-based TCT programs
  - Have promoted patient safety and workflow efficiencies in Wisconsin hospitals for decades

Wisconsin Tech-Check-Tech

- TCT is not permitted in Pharmacy Practice Act
  - Requires a variance from the Pharmacy Examining Board (PEB)
- UW Health Inpatient TCT Programs:
  - Began in 2004
  - Techs have checked over 2 million doses
  - Maintained ≥ 99.8% accuracy

Comparison: Inpatient & Community Settings

Task	Inpatient	Community
Pharmacist clinical review prior to product dispensing?	✓	✓
Clinical judgment required for final product check?	✗	✗
Utilizes barcode scanning to ensure accuracy during product dispensing?	✓	✓

UW Health

Community Pharmacy Workflow

Community Pharmacy Workflow

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Community Pharmacy Workflow

Need for Community TCT

- Technical work of product check is ideal to delegate to technicians
- Would allow reallocation of pharmacist time to clinical activities
  - Push to increase clinical services in outpatient setting
  - Pharmacist integration into the care team
  - Shift to reimbursement for quality and clinical services
- Pharmacists still required by law to perform final product check

UW Health

Proof of Concept Study

- Determined at least 5000 prescriptions were needed for statistical significance
- Identified UW Health mail order pharmacy as the study site
- Established technician qualifications:
  - Pharmacy Technician Certification Board (PTCB) Certification
  - Graduate of an accredited technician training program or at least 3 years of experience as a pharmacy technician
  - Full-time employment status
  - Ability to pass didactic testing and practical competency evaluations

UW Health

Proof of Concept Study

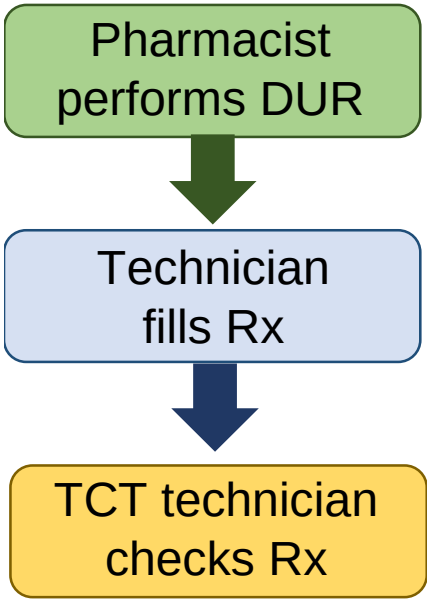
- Developed training materials and competencies
- Established requirements to be completed prior to study participation:
  - Review of all sections in the training manual with a pharmacist
  - Complete final exam with a minimum of 90% accuracy
  - Completion of one-on-one practical training with pharmacists
- Identified 3 technicians to participate in the study
  - All 3 achieved 100% on the exam and passed competency training at the study site

UW Health

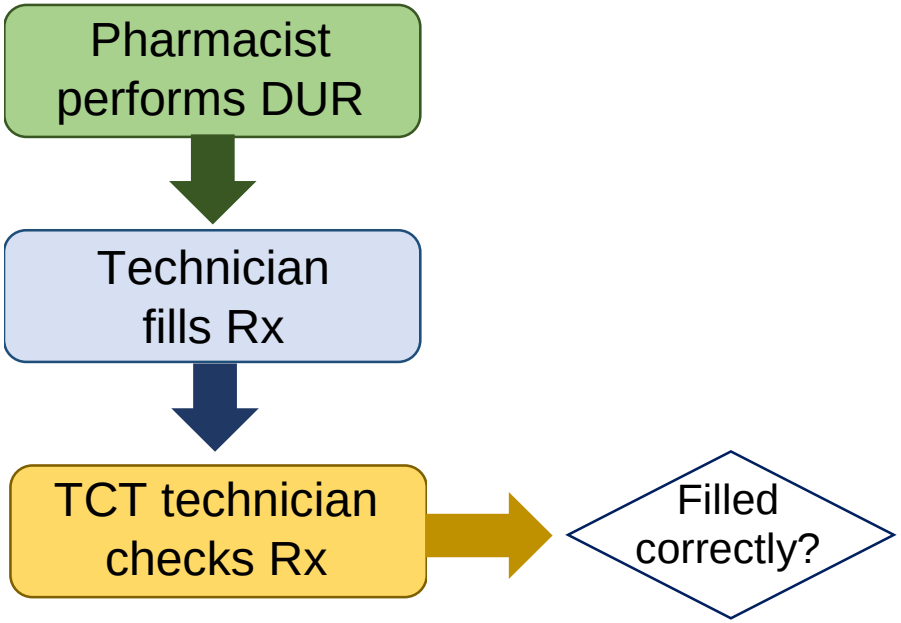
Proof of Concept Study

- Prescription checking accuracy:
  - Technician accuracy evaluated by pharmacist performing verification
  - Pharmacist accuracy evaluated by primary investigator and project team

Proof of Concept Study Workflow



Proof of Concept Study Workflow



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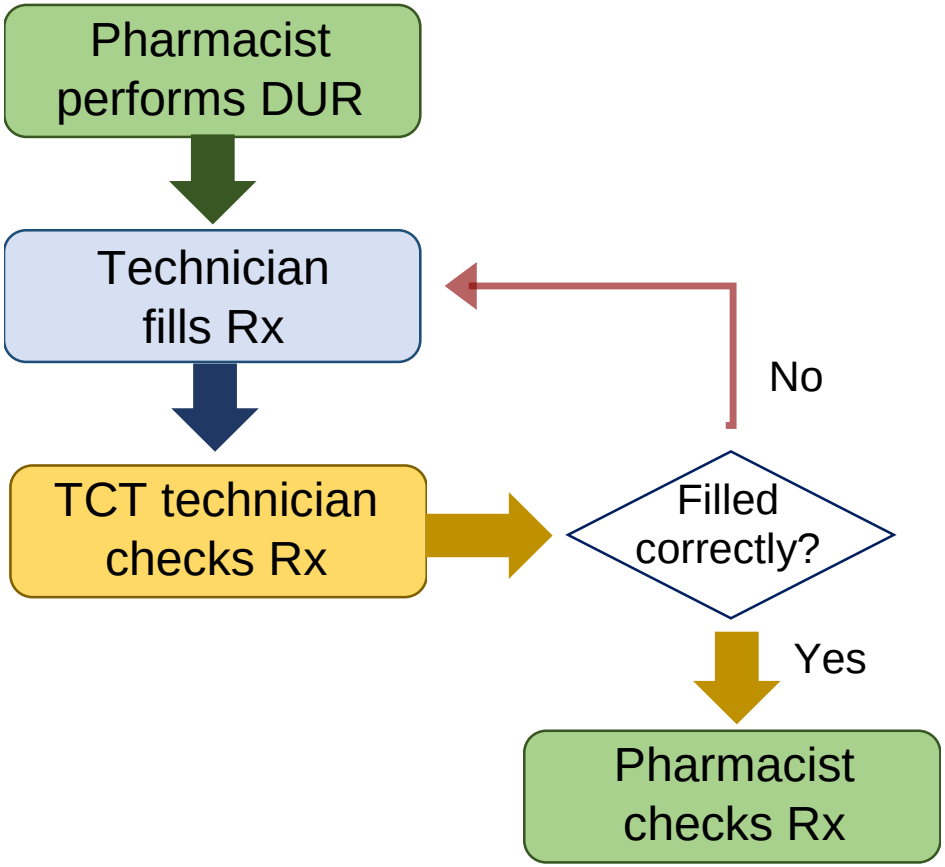

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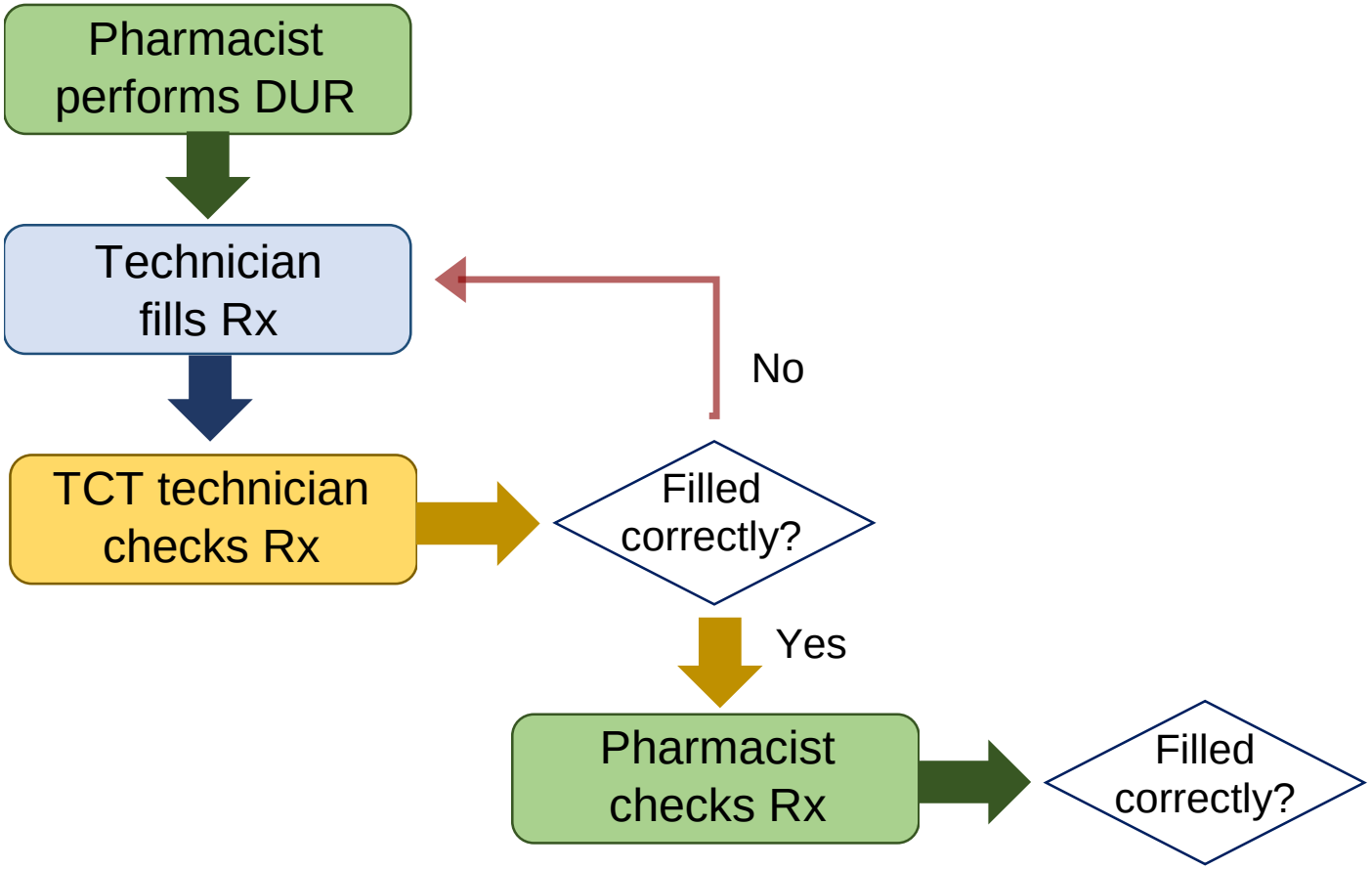
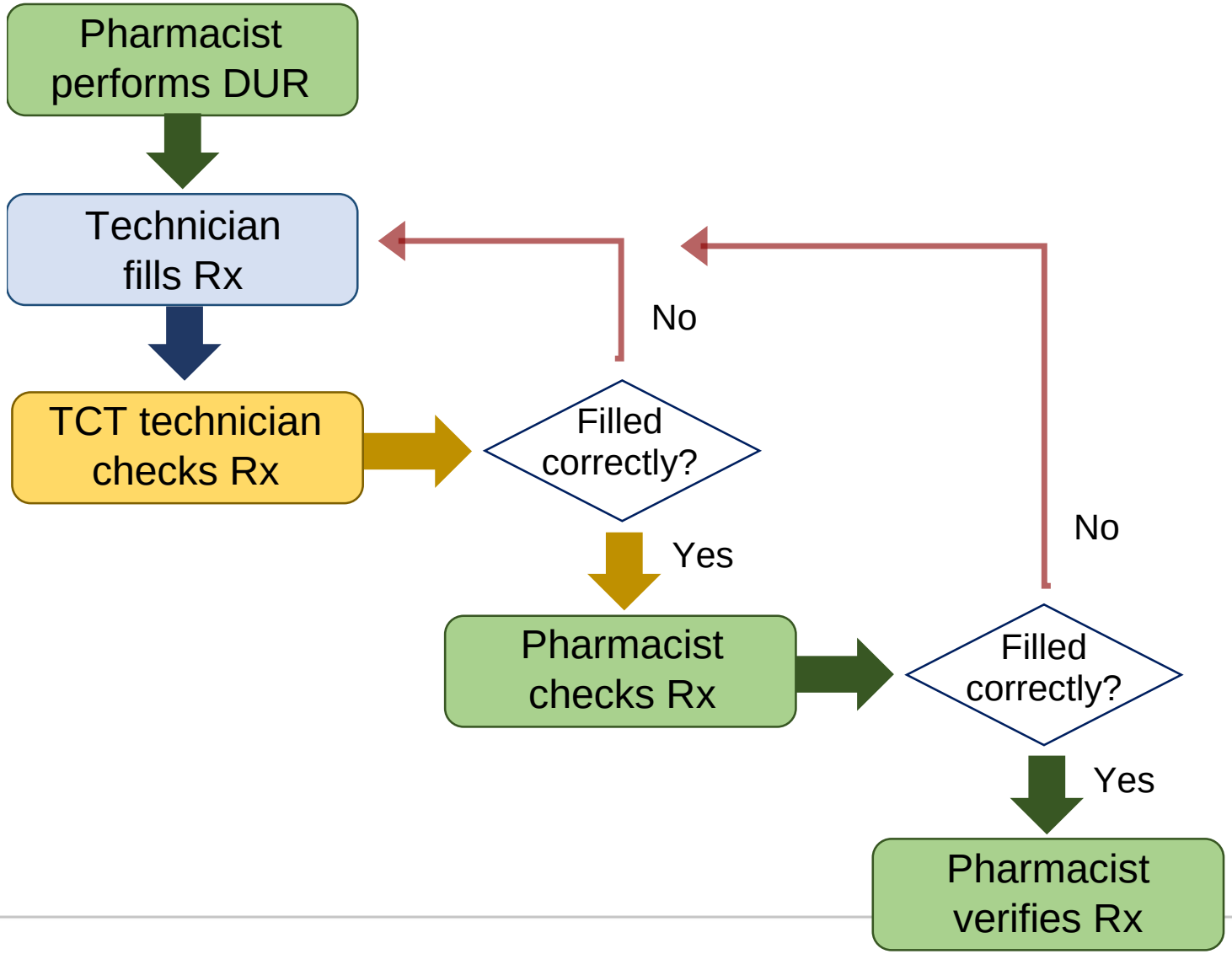


Proof of Concept Study Workflow



Results

Measure	Technician	Pharmacist
Errors	4	15
Prescriptions checked	7538	5571
Accuracy rate	99.947%*	99.740%*
95% CI	99.89 – 99.99%	99.61 – 99.87%
Avg verification time	8.77 seconds	7.10 seconds

*statistically significant

Results

- TCT Technician Time Study:
  - Average = 8.77 seconds (n=287)
  - Annualized = 13,775.70 minutes, ~229.6 hours
- Pharmacist Verification Time Study:
  - Average = 7.10 seconds (n=225)
  - Annualized = 11,149.95 minutes, ~186 hours

23 days!

Conclusions

- Technicians were statistically significantly more accurate than pharmacists
- This project demonstrates the validity of community TCT
- Community TCT would increase pharmacist time available for patient care activities

Community-Based TCT Iowa Model

- Goal: goal of increasing pharmacist provision of patient care services while maintaining patient safety
- Design:
  - Eligibility
    - Pharmacies: Community-based chain and independent
    - Technician: Nationally certified (CPhT), registration with no sanctions, 2,000 hours practice experience, TCT training module completion*, site specific training
- Evaluation:
  - Safety of prescription dispensing by CPhT
  - Provision of community pharmacist-provided patient care services

TCT Training Modules

- Making the Case for Technicians Checking Technicians
- Creating a Tech-Check-Tech Business Plan
- Prevention, Identification, and Classification of Medication Errors
- Dosage Forms
- Pharmacy Calculations Review
- A Look at the Top 200 Drugs

Community-Based TCT

- Iowa example
  - Outcomes (18 months):

	Pharmacist-Checked (Baseline)	Technician-Checked (Overall Pilot)
Total Rx Refills	5565	5950
Wrong Drug	1	1
Wrong Strength	0	2
Safety Cap Error	8	19
Wrong Quantity	2	3
Other Error	4	8
Total Errors	15	33
Accuracy Rate	99.73%	99.445%*

*p=0.484

  - Subgroup analysis
    - Patient safety: 0.07% (p=0.808 compared to RPh)
    - Administrative: 0.49% (p=0.442 compared to RPh)

Advancing Community Pharmacy Quality– A Wisconsin Statewide Research Pilot Project

- Goal:
  - To implement tech-check-tech (TCT) programs in a variety of community pharmacy practices across the state
  - Assess the impact of the program on patient safety measures and pharmacist patient care services
- Purpose:
  - Facilitate community pharmacists delivery of patient care services

Summary

- Community-based TCT has the potential to afford pharmacists more time to provide patient services and streamline pharmacy workflows